# *What is data? p 73*

1. ***Describe the nature of data.***

Data is made up of facts and statistics. Raw facts have no context to them, so you cannot make much sense of them, or give them any meaning.

# *What is a hypothesis?*

1. ***Describe what a hypothesis is.***

A hypothesis is an educated guess or a prediction that you can test in a scientific way.

1. ***What are the characteristics of a reasonable hypothesis?***  
   Some of the characteristics of a reasonable hypothesis is that  
     
   -It should be able to generate a testable prediction.  
   -It should have a specific statement identifying the variables. When a hypothesis says that one thing causes or affects another thing, the independent variable is the cause of the change and the dependent variable is the factor being affected  
   -It must be testable  
   -It needs at least some supporting evidence or observation  
   -It should be based on a specific observation and be limited to specific circumstances  
   -Evidence should be objective, not subjective  
   -It should not be vague or ambiguous   
   -It is not trivial   
   -It should be able to make testable predictions  
   -It should be no more complicated than it need be to explain an observation
2. ***Can a hypothesis be proven? Distinguish between proof, support and refutation.***

A hypothesis can never be proven true with data: it can only ever be supported. However, any hypothesis can be refuted (proven to be false).